

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

**BCom DEGREE EXAMINATION MAY 2026
(First Semester)**

Branch – **COMMERCE (COST & MANAGEMENT ACCOUNTING)**

BUSINESS MATHEMATICS AND STATISTICS

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks

(10 × 1 = 10)

Question No.	Question	K Level	CO
1	The principal amount is Rs. 6,000, and the interest rate is 5% per annum. Calculate the simple interest after 2 years. a) Rs. 600 b) Rs. 500 c) Rs. 300 d) Rs. 200	K1	CO1
2	If Set A = {1, 2, 3, 4} and Set B = {3, 4, 5}, what is the intersection of A and B ($A \cap B$)? a) {3, 4} b) {3, 4, 6} c) {3, 4, 2} d) {3, 4, 1}	K2	CO1
3	Minimum value of $f(x) = x - 3 $ attains at the point a) $x = 1$ b) $x = 2$ c) $x = 3$ d) $x = 4$	K1	CO2
4	Which of the following types of discontinuities occurs when the left-hand limit and right-hand limit exist but are not equal? a) Removable discontinuity b) Jump discontinuity c) Infinite discontinuity d) Finite discontinuity	K2	CO2
5	The median of the numbers 1, 2, 3, 3, 4, and 5 is: a) 1 b) 2 c) 3 d) 4	K1	CO3
6	Which of the following is NOT a measure of dispersion? a) Range b) Mean Deviation c) Median d) Standard Deviation	K2	CO3
7	If two variables have a correlation coefficient of 0, what does this suggest? a) There is a strong positive correlation. b) There is a strong negative correlation. c) There is no linear correlation between the variables. d) Correlation is not applicable to these variables.	K1	CO4
8	In regression analysis, the variable that is being predicted is: a) The independent variable b) The dependent variable c) Usually denoted by x d) The predictor variable	K2	CO4
9	A bag contains 3 red balls and 5 green balls. What is the probability of drawing a red ball? a) $3/8$ b) $5/8$ c) $3/5$ d) $5/3$	K1	CO5
10	Which component of a time series refers to regular, predictable fluctuations that repeat within a fixed period, such as daily or yearly? a) Secular trend b) Irregular variation c) Seasonal variation d) Cyclical variation	K2	CO5

SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks

(5 × 7 = 35)

Question No.	Question	K Level	CO
11.a.	If a term deposit of Rs.4,000 earns an interest of Rs.2,500 in 50 months, find the rate of interest.	K1	CO1
	(OR)		
11.b.	A committee of 5 members is to be formed from a group of 7 men and 6 women. In how many ways can the committee be formed if it must include exactly 3 men and 2 women?		

Cont...

12.a.	Find $\lim_{x \rightarrow 5} \frac{x^2 - 25}{x - 5}$	K2	CO2
	(OR)		
12.b.	Differentiate the following with respect to x. i) $x^3 - 3x^2 + 4x + 3$ ii) $x^5 + 3\log x - 4e^x$		
13.a.	Calculate the mean number of persons per house. Given No. of persons per house: 2 3 4 5 6 Total No. of houses : 10 25 30 25 10 100	K3	CO3
	(OR)		
13.b.	For the data below, calculate standard deviation. 40 50 60 70 80 90 100		
14.a.	Two ladies were asked to rank 7 different types of lipsticks. The ranks given by them are as follows: Lipsticks: A B C D E F G Malu : 2 1 4 3 5 7 6 Mala : 1 3 2 4 5 6 7 Calculate Spearman's rank correlation co-efficient.	K3	CO4
	(OR)		
14.b.	Calculate the two regression equations from the following data: X 10 12 13 12 16 15 Y 40 38 43 45 37 43 Also estimate Y when X=20.		
15.a.	A person is known to hit the target in 3 out of 4 shots, whereas another person is known to hit the target in 2 out of 3 shots. Find the probability of the target, being hit at all when they both try.	K3	CO5
	(OR)		
15.b.	Classify the components of Time series?		

SECTION -C (30 Marks)

Answer ANY THREE questions

ALL questions carry EQUAL Marks

(3 × 10 = 30)

Question No.	Question	K Level	CO
16	Calculate the compound interest for Rs.2,500 for 4 years at 8% per annum. Also calculate the compound interest in the above case when interest is compounded (a) half yearly and (b) quarterly.	K3	CO1
17	Evaluate a) $\int_0^2 (x^2 - 4x + 5)dx$ and b) $\int_0^4 (\sqrt{x} + e^x)dx$.	K2	CO2
18	Weekly wages of a labourer are given below. Calculate Q.D and coefficient of Q.D. Weekly wages (Rs.) : 100 200 400 500 600 Total No. of weeks : 5 8 21 12 6 52	K3	CO3
19	Calculate Karl Pearson's coefficient of correlation for the data given below, taking 66 and 63 as assumed means of X and Y respectively also interpret the result. X: 60 62 64 66 68 70 72 Y: 61 63 63 63 64 65 67	K4	CO4
20	Assume a 4 yearly cycle and calculate the trend by the method of moving averages from the following data to the production of tea in India: Year : 1994 1995 1996 1997 Production (m.lbs.) : 464 515 518 467 Year : 1998 1999 2000 2001 Production (m.lbs.) : 502 540 557 571 Year : 2002 2003 Production (m.lbs.) : 586 612	K5	CO5